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Stuart G. Hibben

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13. ABSTRACT

This is the Soviet Laser Bibliography for the second quarter of 1973 and is No. 12 in the series on Soviet laser developments. The coverage includes basic research on solid state, liquid and gas lasers; chemical lasers; u-v lasers; components; nonlinear optics, spectroscopy of laser materials; ultrashort pulse generation; crystal growing; and general laser theory. Laser applications are listed under biological effects; communications; computer technology; holography; instrumentation and measurements; materials processing; and plasma generation and diagnostics.

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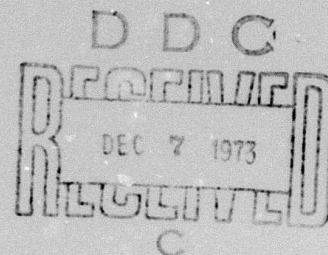
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Introduction

This bibliography has been compiled by the staff of Informatics Inc. in response to a continuing contractual assignment to monitor current Soviet-bloc developments in the quantum electronics field. Of all material reviewed, the major yield has been from the approximately 30 periodicals which are known to report the most advanced and interesting findings in Soviet laser technology.

The period covered is the second quarter of 1973, and includes all significant laser-related articles received by us during that interval. The structure and selection criteria are basically those used in the preceding reports.

For convenience we have abbreviated frequently cited source names; a source abbreviation list and an author index are included. Unless indicated by a parenthesized (RZh, LZHS) notation, all cited sources are available at Informatics Inc. The numbers in parentheses following the authors' names in the text refer to the Cumulative Affiliations List which includes all author affiliations from 1969 to the present.

Acknowledgement is due to the consultant effort of Mr. Yuri Ksander of the Rand Corporation for assistance in selection and structure of the material.

SOVIET LASER BIBLIOGRAPHY, APRIL - JUNE 1973

TABLE OF CONTENTS

INTRODUCTION	i
I. BASIC RESEARCH	
A. Solid State Lasers	
1. Crystal	
a. Ruby	1
b. Transition Ion Activated: Fluorides	2
c. YAG	2
d. Tungstates	2
e. Miscellaneous Crystals	2
2. Semiconductor: Simple Junction	
a. GaAs	3
b. CdSe	4
c. PbSe	4
d. InP	4
3. Semiconductor: Mixed Junction	4
4. Semiconductor: Heterojunction	5
5. Semiconductor: Theory	5
6. Nd Glass	6
B. Liquid Lasers	
1. Dyes	
a. Rhodamine	8
b. Phthalimide	8
c. Miscellaneous Organics	8
2. Acids	9
3. Miscellaneous Liquid	9

C.	Gas Lasers	
1.	Simple Mixtures	
a.	He-Ne	10
b.	He-I	12
2.	Molecular Beam and Ion	
a.	CO ₂ Mixtures	12
b.	CO	14
c.	Noble Gas	14
d.	H ₂	15
e.	Submillimeter	15
f.	Metal Vapor	15
g.	Gasdynamic	16
3.	Ring Lasers	17
4.	Theory	18
D.	Chemical Lasers	
1.	D-T	19
2.	Photodissociative	19
3.	Laser-induced Chemical Reaction	20
4.	Theory	21
E.	UV Lasers	22
F.	Components	
1.	Resonators	
a.	Design and Performance	22
b.	Mode Kinetics	24
2.	Q-Switches	24
3.	Pump Sources	25
4.	Deflectors	27
5.	Attenuators	27

6.	Filters	27
7.	Mirrors	27
8.	Detectors	28
9.	Modulators	30
G.	Nonlinear Optics	
1.	Frequency Conversion	32
2.	Parametric Processes	34
3.	Stimulated Scattering	
a.	Raman	35
b.	Rayleigh	36
4.	Self-focusing	37
5.	Acoustic Interaction	37
6.	Birefringence	38
7.	General Theory	39
H.	Spectroscopy of Laser Materials	41
J.	Ultrashort Pulse Generation	43
K.	Crystal Growing	44
L.	General Laser Theory	44
II.	LASER APPLICATIONS	
A.	Biological Effects	48
B.	Communications	
1.	Beam Propagation in the Atmosphere	49
2.	Beam Propagation in Liquids	52
3.	Systems	53
4.	Theory of Propagation	54

C.	Computer Technology	56
D.	Holography	56
E.	Instrumentation and Measurements	
1.	Measurement of Laser Parameters	65
2.	Miscellaneous Measurement Applications	70
F.	Materials Processing	
1.	Nonlinear Surface Processing	77
2.	Beam-Target Interaction	
a.	Metals	77
b.	Dielectrics	79
c.	Semiconductors	80
d.	Miscellaneous Studies	80
G.	Plasma Generation and Diagnostics	82
III.	MONOGRAPHS	88
IV.	SOURCE ABBREVIATIONS	95
V.	CUMULATIVE AFFILIATIONS LIST	103
VI.	AUTHOR INDEX	119

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F. MATERIALS PROCESSING

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IV. SOURCE ABBREVIATIONS

AiT	-	Avtomatika i telemekhanika
APP	-	Acta physica polonica
DAN ArmSSR	-	Akademiya nauk Armyanskoy SSR. Doklady
DAN AzSSR	-	Akademiya nauk Azerbaydzhanskoy SSR. Doklady
DAN BSSR	-	Akademiya nauk Belorusskoy SSR. Doklady
DAN SSSR	-	Akademiya nauk SSSR. Doklady
DAN TadSSR	-	Akademiya nauk Tadzhikskoy SSR. Doklady
DAN UkrSSR	-	Akademiya nauk Ukrainskoy SSR. Dopovidi
DAN UzbSSR	-	Akademiya nauk Uzbekskoy SSR. Doklady
DBAN	-	Bulgarska akademiya na naukite. Doklady
EOM	-	Elektronnaya obrabotka materialov
FAiO	-	Akademiya nauk SSSR. Izvestiya. Fizika atmosfery i okeana
FGIV	-	Fizika gorenija i vzryva
FiKhOM	-	Fizika i khimiya obrabotka materialov
F-KhMM	-	Fiziko-khimicheskaya mekhanika materialov
FMiM	-	Fizika metallov i metallovedeniye
FTP	-	Fizika i tekhnika poluprovodnikov
FTT	-	Fizika tverdogo tela
FZh	-	Fiziologicheskij zhurnal
GiA	-	Geomagnetizm i aeronomiya
GiK	-	Geodeziya i kartografiya
IAN Arm	-	Akademiya nauk Armyanskoy SSR. Izvestiya. Fizika
IAN Az	-	Akademiya nauk Azerbaydzhanskoy SSR. Izvestiya. Seriya fiziko-tekhnicheskikh i matematicheskikh nauk

IAN B	-	Akademiya nauk Belorusskoy SSR. Izvestiya. Seriya fiziko-matematicheskikh nauk
IAN Biol	-	Akademiya nauk SSSR. Izvestiya. Seriya biologicheskaya
IAN Energ	-	Akademiya nauk SSSR. Izvestiya. Energetika i transport
IAN Est	-	Akademiya nauk Estonskoy SSR. Izvestiya. Fizika matematika
IAN Fiz	-	Akademiya nauk SSSR. Izvestiya. Seriya fizicheskaya
IAN Fizika zemli	-	Akademiya nauk SSSR. Izvestiya. Fizika zemli
IAN Kh	-	Akademiya nauk SSSR. Izvestiya. Seriya khimicheskaya
IAN Lat	-	Akademiya nauk Latviyskoy SSR. Izvestiya
IAN Met	-	Akademiya nauk SSSR. Izvestiya. Metally
IAN Mold	-	Akademiya nauk Moldavskoy SSR. Izvestiya. Seriya fiziko-tehnicheskikh i matematicheskikh nauk
IAN SO SSSR	-	Akademiya nauk SSSR. Sibirskoye otdeleniye. Izvestiya
IAN Tadzh	-	Akademiya nauk Tadzhiksoy SSR. Izvestiya. Otdeleniye fiziko-matematicheskikh i geologo-khimicheskikh nauk
IAN TK	-	Akademiya nauk SSSR. Izvestiya. Tekhnicheskaya kibernetika
IAN Turk	-	Akademiya nauk Turkmenskoy SSR. Izvestiya. Seriya fiziko-tehnicheskikh, khimicheskikh, i geologicheskikh nauk
IAN Uzb	-	Akademiya nauk Uzbekskoy SSR. Izvestiya. Seriya fiziko-matematicheskikh nauk
IBAN	-	Bulgarska akademiya na naukite. Fizicheski institut. Izvestiya na fizicheskaya institut s ANEB
I-FZh	-	Inzhenerno-fizicheskiy zhurnal

IiR	-	Izobretatel' i ratsionalizator
ILEI	-	Leningradskiy elektrotekhnicheskiy institut. Izvestiya
IT	-	Izmeritel'naya tekhnika
IVUZ Avia	-	Izvestiya vysshikh uchebnykh zavedeniy. Aviatsionnaya tekhnika
IVUZ Cher	-	Izvestiya vysshikh uchebnykh zavedeniy. Chernaya metallurgiya
IVUZ Energ	-	Izvestiya vysshikh uchebnykh zavedeniy. Energetika
IVUZ Fiz	-	Izvestiya vysshikh uchebnykh zavedeniy. Fizika
IVUZ Geod	-	Izvestiya vysshikh uchebnykh zavedeniy. Geodeziya i aerofotos'yemka
IVUZ Geol	-	Izvestiya vysshikh uchebnykh zavedeniy. Geologiya i razvedka
IVUZ Gorn	-	Izvestiya vysshikh uchebnykh zavedeniy. Gornyy zhurnal
IVUZ Mash	-	Izvestiya vysshikh uchebnykh zavedeniy. Mashinostroyeniye
IVUZ Priboro	-	Izvestiya vysshikh uchebnykh zavedeniy. Priborostroyeniye
IVUZ Radioelektr	-	Izvestiya vysshikh uchebnykh zavedeniy. Radioelektronika
IVUZ Radiofiz	-	Izvestiya vysshikh uchebnykh zavedeniy. Radiofizika
IVUZ Stroi	-	Izvestiya vysshikh uchebnykh zavedeniy. Stroitel'stvo i arkhitektura
KhVE	-	Khimiya vysokikh energiy
KiK	-	Kinetika i kataliz
KL	-	Knizhnaya letopis'
Kristall	-	Kristallografiya
KSpF	-	Kratkiye soobshcheniya po fizike

LC	-	Received at Library of Congress
LZhS	-	Letopis' zhurnal'nykh statey
MiTOM	-	Metallovedeniye i termicheskaya obrabotka materialov
MP	-	Mekhanika polimerov
MTT	-	Akademiya nauk SSSR. Izvestiya. Mekhanika tverdogo tela
MZhiG	-	Akademiya nauk SSSR. Izvestiya. Mekhanika zhidkosti i gaza
NK	-	Novyye knigi
NM	-	Akademiya nauk SSSR. Izvestiya. Neorganicheskiye materialy
NTO SSSR	-	Nauchno-tekhnicheskiye obshchestva SSSR
OiS	-	Optika i spektroskopiya
OMP	-	Optiko-mekhanicheskaya promyshlennost'
Otkr izobr	-	Otkrytiya, izobreteniya, promyshlennyye obraztsy, tovarnyye znaki
PF	-	Postepy fizyki
Phys abs	-	Physics abstracts
PM	-	Prikladnaya mekhanika
PMM	-	Prikladnaya matematika i mekhanika
PSS	-	Physica status solidi
PSU	-	Pribory i sistemy upravleniya
PTE	-	Pribory i tekhnika eksperimenta
Radiotekh	-	Radiotekhnika
RiE	-	Radiotekhnika i elektronika
RZhAvtom	-	Referativnyy zhurnal. Avtomatika, telemekhanika i vychislitel'naya tekhnika
RZhElektr	-	Referativnyy zhurnal. Elektronika i yeye primeneniye

RZhF	-	Referativnyy zhurnal. Fizika
RZhFoto	-	Referativnyy zhurnal. Fotokinitekhnika
RZhGeod	-	Referativnyy zhurnal. Geodeziya i aeros'yemka
RZhGeofiz	-	Referativnyy zhurnal. Geofizika
RZhInf	-	Referativnyy zhurnal. Informatics
RZhKh	-	Referativnyy zhurnal. Khimiya
RZhMekh	-	Referativnyy zhurnal. Mekhanika
RZhMetrolog	-	Referativnyy zhurnal. Metrologiya i izmeritel'naya tekhnika
RZhRadiot	-	Referativnyy zhurnal. Radiotekhnika
Sb1	-	Sbornik. Kvantovaya elektronika, no. 1(13), Moskva, 1973.
Sb2	-	Kvantovaya elektronika, no. 6, Kiyev, 1972.
Sb3	-	Zimnaya shkola po fizike poluprovodnikov. 4th. Materialy. 1972. Leningrad, 1972.
Sb4	-	Troynnye poluprovodniki $A^{II}B^{IV}C_2^V$ i $A^{II}B_2^{III}C_4^{VI}$. Kishinev, Shtiintsa, 1972.
Sb5	-	Stsintillyatory i organicheskiye lyuminyofory. Khar'kov, 1972.
Sb6	-	Ukrainskaya respublikanskaya nauchno-tekhnicheskaya konferentsiya, posvyashchennaya 50-letiyu metrologicheskoy sluzhby UkrSSR, 1972. Khar'kov, 1972.
Sb7	-	Goreniye i vzryv. Moskva, Nauka, 1972.
Sb8	-	Vsesoyuznyy simpozium po khimii neorganicheskikh ftoridov. erd. Odessa, 1972. No place of publication, 1972.
Sb9	-	Vsesoyuznaya konferentsiya po nelineynoy optike. 6th. Minsk, 1972.
Sb10	-	Universitet druzhby narodov im. Patrisa Lumumby. Fakul'tet fiziko-matematicheskikh i yestestvennykh nauk. Sbornik nauchnykh rabot aspirantov, no. 11, 1972.

- Sbl1 - International Conference of Light Scattering in Solids. 2nd. Paris, 1971. Proceedings. Paris, 1971.
- Sbl2 - Vsesoyuznoye soveshchaniye po rostu kristallov. 4th. 1972. Part 2. Yerevan, 1972.
- Sbl3 - Vsesoyuznaya shkola po golografii. 3rd. 1971. Materialy. Leningrad, 1972.
- Sbl4 - Nekotoryye voprosy biodinamiki i bioenergii organizma v norme i patologii, biostimulyatsiya lazernom izlucheniye. Alma-Ata, 1972.
- Sbl5 - Fizika goreniya i metody yeye issledovaniya, no. 2, Cheboksary, 1971.
- Sbl6 - Opticheskaya i elektroopticheskaya obrabotka informatsii. Moskva, 1972.
- Sbl7 - Sovremennyye sistemy zapisi i vosproizvedeniya izobrazheniya. Moskva, Iskusstvo, 1972.
- Sbl8 - CPEM Digest 1972. Conference of Precision Electromagnetic measurements, Boulder, Colorado, 1972. New York, N. Y., 1972.
- Sbl9 - Avtomatizatsiya i kontrol'no-izmeritel'nyye pribory. Nauchno-tehnicheskii sbornik, no. 10, 1972.
- Sb20 - Avtomatizatsiya nauchnykh issledovaniya. Riga, Zinatne, 1972.
- Sb21 - Avtomatizatsiya nauchnykh issledovaniya morey i okeanov. Simpozium. 1971. Part 1. Sevastopol', 1972.
- Sb22 - Rasseyaniye sveta v zemnoy atmosfere. Alma-Ata, Nauka, 1972.
- Sb23 - Proyektirovaniye, no. 5, Moskva, 1972.
- Sb24 - Teplofizicheskiye svoystva i gazodinamika vysokotemperaturnykh sred. Moskva, Nauka, 1972.
- Sb25 - Fizyka tverdoho tila, no. 2, 1972.
- Sb26 - Fizyka tverdoho tila, no. 3, Kharkiv, 1973.
- SovSciRev - Soviet science review
- TiEKh - Teoreticheskaya i eksperimental'naya khimiya

TKiT	-	Tekhnika kino i televideniya
TMF	-	Teoreticheskaya i matematicheskaya fizika
Tr1	-	Moskovskiy fiziko-tekhnicheskoy institut. Trudy, 1971(1972).
Tr2	-	Nauchno-issledovatel'skiy i proyektnyy institut redkometallicheskooy promyshlennosti. Nauchnyye trudy, no. 46, 1973.
Tr3	-	Trudy Metrologicheskikh institutov SSSR. Khar'kovskiy nauchno-issledovatel'skiy institut metrologii, no. 7, 1972.
Tr4	-	Institut mekhaniki Moskovskogo universiteta. Nauchnyye trudy, no. 18, 1972.
Tr5	-	Moskovskoye vyssheye tekhnicheskoye uchilishche im. Baumana. Trudy, no. 153, 1971(1972).
Tr6	-	Moskovskoye vyssheye tekhnicheskoye uchilishche im. Baumana. Trudy, no. 154, 1972.
Tr7	-	Moskovskiy energeticheskoy institut. Trudy, no. 144, 1972.
Tr8	-	Leningradskiy institut aviatsionnogo priborostroyeniya. Trudy, no. 75, 1972.
Tr9	-	Irkutskiy politekhnicheskoy institut. Trudy, no. 71, 1972.
Tr10	-	Vsesoyuznyy nauchno-issledovatel'skiy kinofotoinstitut, no. 65, 1972.
Tr11	-	Moskovskiy institut elektronnoy tekhniki. Sbornik nauchnykh trudov po problemam mikroelektroniki, no. 12, 1972.
TVT	-	Teplofizika vysokikh temperatur
UFN	-	Uspekhi fizicheskikh nauk
UFZh	-	Ukrainskiy fizicheskoy zhurnal
UMS	-	Ustalost' metallov i splavov
UNF	-	Uspekhi nauchnoy fotografii
VAN	-	Akademiya nauk SSSR. Vestnik

VAN BSSR	-	Akademiya nauk Belorusskoy SSR. Vestnik
VAN KazSSR	-	Akademiya nauk Kazakhskoy SSR. Vestnik
VBU	-	Belorusskiy universitet. Vestnik
VDNKh SSSR	-	VDNKh SSSR. Informatsionnyy byulleten'
VLU	-	Leningradskiy universitet. Vestnik. Fizika, Khimiya
VMU	-	Moskovskiy universitet. Vestnik. Seriya fizika, astronomiya
ZhETF	-	Zhurnal eksperimental'noy i teoreticheskoy fiziki
ZhETF P	-	Pis'ma v Zhurnal eksperimental'noy i teoreticheskoy fiziki
ZhFKh	-	Zhurnal fizicheskoy khimii
ZhNiPFiK	-	Zhurnal nauchnoy i prikladnoy fotografii i kinematografii
ZhNKh	-	Zhurnal neorganicheskoy khimii
ZhPK	-	Zhurnal prikladnoy khimii
ZhPMTF	-	Zhurnal prikladnoy mekhaniki i teoreticheskoy fiziki
ZhPS	-	Zhurnal prikladnoy spektroskopii
ZhTF	-	Zhurnal tekhnicheskoy fiziki
ZhVMMF	-	Zhurnal vychislitel'noy matematiki i matematicheskoy fiziki
ZL	-	Zavodskaya laboratoriya

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VI. AUTHOR INDEX

A

Abramyan, L. E. 53
 Abrikosova, I. I. 80
 Adonts, G. G. 37
 Adrianova, I. I. 30
 Adukov, A. D. 38
 Afanas'yev, A. A. 35, 39
 Afanas'yev, G. K. 51
 Agafitei, A. 6
 Ageyev, V. A. 80
 Agranat, M. B. 52
 Akhmanov, S. A. 37, 66, 88
 Akimov, A. A. 48
 Akopyan, V. S. 48
 Aleksandrov, I. V. 35, 41
 Aleksanyan, A. G. 5
 Alekseyev, A. I. 56
 Alekseyev, V. A. 18, 25
 Alekseyeva, A. N. 22
 Alfyorov, Zh. I. 4, 5, 41
 Alimov, D. T. 14
 Aliyev, Yu. M. 82
 Allakhverdyan, R. G. 6
 Altukhov, P. D. 25
 Ambartsumyan, R. V. 20, 44
 Amosov, V. M. 2
 Anan'in, O. B. 82
 Anan'yev, Yu. A. 22
 Andreyev, A. A. 70
 Andreyev, G. D. 5
 Andreyev, R. B. 6
 Andreyev, V. M. 41
 Andreyev, Ye. A. 12
 Andreyev, Yu. S. 56
 Andreyeva, T. L. 18
 Andryukhina, E. D. 88
 Anisimov, S. I. 79, 80
 Anisimov, Yu. M. 9
 Anokhin, A. V. 14
 Anshukov, B. V. 80
 Antipenko, B. M. 7
 Antonov, V. S. 15
 Antonowicz, D. 18
 Antropov, Ye. T. 12
 Apanasevich, P. A. 24, 39
 Arakelyan, S. M. 65
 Arapova, E. Ya. 65
 Arifov, T. U. 77
 Arifov, U. A. 1, 77

Arkhipenko, D. K. 41
 Armand, N. A. 49
 Arsen'yev, V. V. 70
 Artemov, Yu. P. 72
 Arutyunyan, A. G. 65, 66
 Askar'yan, G. A. 37, 81
 Aslanidi, Ye. B. 8
 Asnis, L. N. 30
 Atanassov, P. A. 12
 Atroshchenko, V. I. 16
 Atutov, S. N. 12
 Aubrecht, L. 30, 38
 Aver'yanov, N. Ye. 13
 Avotin, S. S. 79
 Azkharov, V. P. 80

B

Babenko, K. I. 66
 Babenko, V. P. 77
 Babich, V. M. 10
 Bagdasarov, Kh. S. 2, 3
 Bakhrarov, S. A. 16
 Bakhtigaliyev, S. V. 49
 Bakos, J. 45
 Baloshin, Yu. A. 13
 Balagurov, A. Ya. 25
 Balashov, I. F. 28
 Balashov, Ye. I. 78
 Bal'zamov, A. N. 66
 Banakh, V. A. 50
 Barachevskiy, V. A. 60
 Baranov, S. M. 54
 Barash, V. Ya. 32
 Barchukov, A. I. 82
 Barinov, V. V. 62
 Barmin, R. P. 88
 Barteneva, O. D. 52
 Baryshev, V. P. 25
 Baryshevskiy, V. G. 45
 Bashkin, A. S. 21
 Basov, N. G. 13, 14, 17, 21, 82
 Basov, Yu. G. 25, 26
 Batanov, V. A. 78
 Batovskiy, O. M. 25
 Batyrev, V. A. 9
 Bayramov, B. Kh. 41

Bazhin, N. M.	54	Forisevich, N. A.	8
Bedilov, M. R.	1, 77	Borovich, B. L.	19, 21
Bekker, A. A.	28	Borovik-Romanov, A. S.	38
Bekov, G. I.	19	Borovoy, A. G.	50
Belenov, E. M.	17	Borovskiy, V. N.	66
Belokrinitskiy, N. S.	56	Borshch, A. A.	37
Belousov, M. V.	70	Borshchevskiy, A. S.	39
Belousov, P. S.	70	Bortkevich, A. V.	35
Belozerov, A. F.	57	Boyarskiy, K. K.	15
Bel'skiy, D. P.	22	Boytsov, V. F.	45
Belyayev, L. M.	81	Bratman, V. L.	45
Benderskiy, V. A.	41	Braude, V. B.	53
Berchanskiy, M. I.	28	Brikinshteyn, V. Kh.	41
Berchanskiy, Ya. I.	28	Brodin, M. S.	37
Berezhetskaya, N. K.	14	Brodskiy, L. Ya.	66
Berezin, P. D.	30	Broude, V. L.	41
Berezin, V. M.	50	Brunner, W.	43
Berezkin, A. N.	57	Brusin, I. Ya.	57
Berezovskiy, V. V.	27	Bryzzhev, L. D.	88
Bergel'son, V. I.	81	Brzhozovskiy, V. M.	70
Berkovskiy, A. G.	66	Budzyak, A. V.	57
Berliner, M. A.	70	Bukatyy, V. I.	50, 55, 86
Bershteyn, I. L.	66	Bukhonin, Yu. S.	68
Besedin, A. A.	25	Bukzdorf, N. V.	53
Bespalov, V. I.	45	Bulatov, O. G.	26
Bespalova, M. P.	74	Bulgakov, B. M.	66, 70
Beterov, I. M.	35	Bunkin, F. V.	38, 82
Bezzubov, Yu.	70	Burakov, V. S.	83
Bille, J.	4	Buravl'ov, Yu. M.	78
Birulin, A. I.	66	Burlov, G. M.	71
Blinov, L. M.	30	Burneyka, K. P.	34, 43
Blokh, M. A.	88	Burov, L. I.	32
Bobovich, Ya. S.	35, 41	Burshteyn, A. I.	40
Bochkov, D. S.	50	Bushuyev, V. A.	39
Bogatyrev, V. A.	78	Butov, I. Ya.	14
Bogdanis, S. D.	28	Butslov, M. M.	67
Bogdankevich, O. V.	3	Butusov, M. M.	57
Bogdanov, A. D.	88	Butyagin, O. F.	32, 33
Bogomolov, A. M.	30	Butylkin, V. S.	35
Bogomolov, A. S.	57	Buyko, L. D.	71
Bogomolov, O. S.	50	Duynov, G. N.	57
Bogoslovskiy, A. I.	48	Byalik, V. L.	53
Bokhon, Yu. A.	16	Bychkov, Yu. I.	74
Bolot'ko, L. M.	8	Bykov, M. M.	66, 70
Bol'shakov, Ye. F.	37	Bykovskiy, Yu. A.	16, 58, 82
Bonch-Bruevich, A. M.	78	Byszewski, W. W.	13
Bondarenko, B. V.	70		
Bondarenko, I. M.	70		
Bondarenko, M. D.	57		
Bondarenko, Ye. G.	28		
Bordun, V. P.	57		
Borin, A. V.	58		

C

Chaban, A. A.	38
Chaltykyan, V. O.	37
Chandayev, A. K.	64

Chashechkin, Yu. D.	76
Chaykin, A. M.	21
Chebotayev, V. P.	35
Chechenina, Ye. P.	45
Chekalinskaya, Yu. I.	45
Chekhlova, T. K.	18
Chelyshev, K. B.	70
Chernigovskiy, V. V.	10
Chernikov, V. A.	83
Chernov, V. A.	7, 17
Chernykh, D. F.	57
Cherpak, N. T.	45
Chikin, R. V.	67
Chirikov, Yu. V.	16
Chirkin, A. S.	65, 66
Chkuaseli, Z. D.	14
Chugayev, V. N.	77
Chumakov, A. N.	78
Cojocar, E.	83
Csillag, L.	28

D

Dalidchik, F. I.	45
Damaskin, I. A.	28
Daniel', Ye. V.	26
Danileyko, M. V.	17, 56
Danileyko, Yu. K.	39
Danilov, A. A.	71
Danilova, I. A.	25
Danilychev, V. A.	14
Das'ko, A. D.	8
Davletchin, I. I.	16
Davydov, A. Ye.	58
Davydov, B. L.	34, 40, 89
	91
Davydov, V. V.	46
Delone, G. A.	14
Delone, N. B.	14
Demidov, B. A.	67
Demidov, M. N.	22
Demin, A. I.	19, 21
Denchik, B. N.	50
Denisov, Yu. V.	2
Denisyuk, Yu. N.	63
Deryugin, I. A.	1, 26, 34,
	46, 67
Deryugin, L. N.	18
Deumlich, F.	53
Dietze, H.-J.	87
Dindarov, V. E.	10
Diyanov, Kh. A.	37

Dmitriyev, A. L.	58
Dmitriyev, L. S.	46
Dmitriyev, V. G.	32, 33
Dmitryuk, A. V.	7, 26
Dmokhovskiy, V. I.	72
Dneprovskiy, V. S.	67
Dobrokhoto, V. K.	8
Dobrzhanskiy, G. G.	38
Dolgov-Savel'yev, G. G.	89
Dolinin, V. V.	51
Domrachev, G. A.	92
Dorobantu, I. A.	24
Dorogaya, L. N.	67
Dorokhov, B. Ye.	58
Doronin, P. P.	48
Dubik, A.	67
Dubnishchev, Yu. N.	71, 75
Dudavskiy, Ye. I.	47
Dudich, V. M.	71
Dudkin, V. A.	19
D'yakonov, M.	32
D'yakov, Yu. Ye.	37
Dyubko, S. F.	15
Dzhagarov, Yu. A.	31
Dzhugeli, B. P.	59
Dzyubanov, S. F.	25
Dzyubenko, M. I.	8

E

Efendiyev, T. Sh.	9
Egamov, U.	1
Ellert, G. V.	11
Emdin, V. S.	72
Erm, R. E.	45

F

Fabelinskiy, I. L.	36, 71, 89
Fabrikant, V. A.	68
Fadeyev, V. V.	51
Fanchenko, S. D.	67
Fannibo, A. K.	82
Faynberg, B. D.	81
Fedor, V. M.	17
Fedorov, A. A.	2
Fedorov, B. F.	58, 89
Fedorov, V. B.	78
Fedorov, V. M.	18, 75
Fedorov, V. V.	30
Fedotov, A. A.	10
Fedotov, N. G.	19

Fenic, C.	6
Ferdman, N. A.	4, 29
Fertik, N. S.	73
Filyukov, A. A.	19
Fisher, A. M.	13
Fisun, A. I.	66, 70
Fok, M. V.	65
Fokin, Ye. P.	89
Fomin, V. I.	42
Fomin, Yu. I.	68
Fortus, V. M.	35
Fotiyev, A. A.	42
Frahm, J.	35
Freydman, G. I.	35
Fridman, S. A.	65
Frolov, V. A.	67, 83

G

Gadomskiy, O. N.	3
Gafurova, N. S.	58
Gagarin, A. P.	78
Galant, Ye. I.	67
Galeyev, A. G.	71
Galushkin, M. G.	46
Garbuzov, D. Z.	4, 41
Gasparyan, S. S.	31, 90
Gavanin, V. A.	70
Gavrilenko, V. G.	50
Gavrilov, F. F.	23, 42
Georgoviani, A. N.	67
Gerasimova, N. Kh.	33
Gernitts, E.	83
Gintoft, R. I.	41
Ginzburg, V. M.	58
Girina, M. G.	58, 64
Gizatullin, R. K.	57
Gladchenko, L. F.	8
Glazer, A. A.	56
Glebov, L. B.	7
Glinchuk, K. D.	28
Gluchowski, W.	83
Gnatovskiy, A. V.	56, 57
Godenko, L. P.	6, 46
Gol'berg, I. Ye.	71
Gol'danskiy, V. I.	89
Gol'denberg, A. L.	53
Gol'din, Yu. A.	24, 33
Golger, A. L.	46
Golovan, A. A.	17, 71
Golovleva, L.	5
Goloyadova, V. I.	68

Gol'ts, E. Ya.	37
Golyayev, Yu. D.	33, 66
Goncharov, V. K.	78
Gorban', I. S.	1
Gorbunov, L. M.	37
Gorbunov, Ye. A.	69
Gordiyets, B. F.	89
Gordon, Ye. B.	20
Goryachev, B. V.	50
Goryunova, N. A.	29
Govorov, B. V.	71
Gradov, O. M.	82
Grasyuk, A. Z.	80
Gribkovskiy, V. P.	4
Gribov, B. G.	92
Grigor'yeva, V. I.	8
Grigor'yeva, V. S.	39
Grishchenko, L. V.	15
Gruich, D. D.	77
Grycewicz, H.	18
Gubanov, Yu. I.	66
Gubin, M. A.	17
Guendel, H.	13
Gulgazaryan, K. A.	53
Gul'kov, V. N.	29
Gulyayeva, A. S.	5, 80
Gurevich, G. L.	81
Gurevich, M. A.	80
Gurevich, S. B.	59
Gurfink, A. M.	50
Gurvich, A. S.	51
Gusev, V. D.	51
Gusev, V. V.	50
Gutshabash, S. D.	50

H

Hoff, F.	59
Hytha, M.	59

I

Ibragimov, A.	77
Ignatavichyus, M. V.	34, 43
Igoshin, F. F.	67
Il'inskiy, Yu. A.	33, 36
Il'yushko, V. G.	16
Ionikh, Yu. Z.	10
Ionin, A. A.	7
Irshinskiy, A. L.	16
Isbasescu, M.	6
Ismailov, I.	5

Isyanova, Ye. D.	24	Karpuzov, D. S.	33
Itskhoki, I. Ya.	24, 33	Karyakin, A. V.	78
Ivakin, Ye. V.	39, 56	Kastal'skiy, A. A.	30
Ivanov, B. I.	20	Katayev, D. I.	16
Ivanov, G. K.	45	Kaukis, A. A.	28
Ivanov, I. I.	3	Kaveyeva, Z. M.	55
Ivanov, M. N.	13	Kaytmazov, S. D.	87
Ivanov, N. I.	72	Kazachkovskiy, V. V.	76
Ivanov, V. A.	13, 68	Kazakov, A. A.	33
Ivanov, V. S.	26	Kazarinov, R. F.	5
Ivanov, Ye. K.	39	Kazaryan, R. A.	31, 90
Ivanova, N. V.	76	Kechkemeti, I.	9
Ivlev, L. S.	51, 52, 72	Keydan, V. F.	6
Ivlev, Ye. I.	68	Khadzhi, P. I.	47
Izyumov, A. O.	49	Khaimov-Mal'kov, V. Ya.	39
<u>J</u>		Khamalyan, Ye. Z.	33
Jach, K.	83	Khanin, Ya. I.	47
Janossy, M.	28	Khapalyuk, A. P.	23
Janta, J.	59	Khashkhozhev, Z. M.	2, 41
Javorsky, S.	59	Khaskin, I. Ya.	66
Jo Jyong Nam	11	Khattatov, V. U.	67
<u>K</u>		Khaydarov, K.	1
Kabelka, V. I.	34, 43	Khaykir B. Ye.	59
Kaczmarek, F.	1	Khesed Ye. A.	72
Kagan, Yu.	89	Kheyfets, Ye. I.	60
Kakichashvili, Sh. D.	59	Khidirov, S. G.	20
Kalabukhova, Ye. N.	42	Khizhnyak, A. I.	7
Kalabushkin, O. I.	9, 78	Khmelevtsov, S. S.	50, 55
Kalashnikov, N. P.	90	Khodkevich, D. D.	14
Kalenov, Yu. A.	12	Khodzhayev, V. P.	66
Kaliski, S.	83, 84, 85	Khokhlov, R. V.	36, 88
Kaloshkin, E. P.	71	Kholodnykh, A. I.	65
Kalousek, I.	49	Khromykh, A. M.	11
Kaminskiy, A. A.	3	Khronopulo, Yu. G.	35
Kanayev, I. F.	90	Khuzeyev, A. P.	74
Kaporskiy, L. N.	9	Khvesyuk, V. I.	25
Kapralova, G. A.	21	Kim Bong Ju	11
Kara-Ushanov, V. Yu.	42	Kircheva, P. P.	42
Karagodova, T. Ya.	90	Kirillov, N. I.	60, 64
Karapetyan, G. O.	7, 26, 67	Kiriy, A. Yu.	82
Karaul'nik, A. Ye.	30	Kir'yanov, A. P.	67
Karlov, N. V.	13, 85	Kir'yanov, K. Ye.	30
Karpov, L. P.	27	Kiss, A.	45
Karpov, N. A.	85	Kizel', V. A.	33
Karpov, S. V.	70	Klatt, A.	48
Karpov, V. Ya.	19	Kleshchinskiy, L. I.	43
Karpusha, V. Ye.	51	Kleszczewski, Z.	38
Karpushko, F. V.	1	Klevtsov, P. V.	3
		Klimenko, I. S.	60
		Klimontovich, Yu. L.	26
		Klimov, A. A.	76
		Klimova, A. Yu.	33

Klimova, N. M.	80	Korotkov, P. A.	36
Klochane, Ye. L.	17	Korrovits, V. Kh.	72
Klose, E.	43	Korshunov, I. P.	51
Kludzin, V. V.	31	Korytnyy, S. B.	49
Klyshko, D. N.	36, 67	Korzhasin, A. N.	72
Klyukvin, A. B.	67	Korzhenovich, I. M.	17, 23
Knubovets, R. G.	41	Kosarevskaya, L. A.	42
Knyazev, B. A.	89	Koshug, D. G.	67
Knyazev, I. N.	15, 22	Kostin, A. B.	66
Kobrin, V. I.	69	Kostiynenko, A. I.	68
Kochelap, V. A.	21	Kosyakov, V. I.	67
Kogarko, S. M.	16, 19, 21	Kotlikov, Ye. N.	15
Kokora, A. N.	79	Kotlyarchuk, B. K.	25
Kokushkin, A. M.	20	Kotov, G. A.	80
Kolbasov, G. Ya.	64	Kotov, O. I.	10
Koleshko, V. M.	71	Kotylev, V. N.	78
Kolosov, Yu. A.	60	Koval'chuk, V. M.	33
Kolpakova, I. V.	26	Kovalev, A. A.	69
Kolyadin, A. I.	31	Kovalevskiy, V. G.	75
Kolyushenko, Ye. A.	33	Koval'skaya, V. A.	29
Komar, V. G.	60	Koval'skiy, L. V.	62
Komissarov, V. M.	38	Kovarskiy, V. A.	4
Kompanets, I. N.	30, 32	Kovgan, L. N.	42
Kondilenko, I. I.	36	Kovner, M. A.	36
Kondrat'yev, K. Ya.	52	Kovrigin, A. I.	37
Kondrat'yev, Yu. N.	54	Kovtonyuk, N. F.	29
Konnikov, S. G.	4	Kowalczyk, R.	18
Kononchuk, G. L.	1	Kozel, S. M.	10, 23, 46
Kononchuk, L. P.	1	Kozenkov, V. M.	60
Kononenko, L. I.	33	Kozhevnikov, N. M.	18, 23
Kononenko, V. K.	4	Kozlov, A. P.	48
Konov, V. I.	82	Kozlov, N. I.	19
Koperles, B. M.	32	Kozlov, N. P.	25
Kopvillem, U. Kh.	55, 91	Kozlov, N. V.	50
Kop'yev, P. S.	4, 41	Kozma, L.	9
Kopylov, P. M.	60	Kozyrev, B. P.	29
Kopytin, Yu. D.	55	Kozyrev, Yu. P.	82
Korbutyak, D. V.	43	Krasilov, Yu. I.	11
Kordyukov, N. I.	42	Krasnov, M.	48
Koreneva, L. G.	34, 40, 89,	Krasnov, M. M.	48
	91	Krasnyanskaya, V. N.	33
Korniyenko, L. A.	79	Krasovitskiy, B. M.	8
Korniyenko, L. S.	17, 26	Krasyuk, B. A.	5, 80
Kornya, V. Kh.	29	Kravchenko, V. B.	9
Korobkin, V. V.	66, 86	Kravtsov, N. V.	17, 26
Korobov, A. M.	8	Krayskiy, A. V.	65
Korolev, A. F.	68	Kreynes, N. M.	38
Korolev, F. A.	16, 36	Krivichikova, E. P.	79
Korolev, Yu. D.	74	Krivilev, V. A.	79
Korol'kov, V. I.	5	Krivotnogov, S. N.	29
Koronkevich, V. P.	71, 75	Krivoshchekov, G. V.	44
Korotin, V. G.	29	Krokhin, O. N.	21, 86

Kruglov, R. A.	51	Levin, B. M.	51, 55
Kruglyakov, E. P.	90	Levin, V. A.	11, 12
Krupitskiy, E. I.	27, 72	Leykin, A. Ya.	11, 13, 67,
Krutsikh, O. I.	66		68, 72, 73
Krylov, K. I.	13, 68, 79,	Li Hyon Sik	11
	91	Li In Suk	11
Krylov, V. A.	91	Libenson, M. N.	79, 80
Krylov, V. N.	34	Liebing, H.	4
Krynetskiy, B. B.	13	Linker, B. Yu.	73
Kryukov, G. M.	15	Linnik, L. F.	28
Kryukov, G. S.	54	Lis, L.	11
Kryukov, P. G.	44	Lisitsa, M. P.	24
Kryukova, I. V.	44	Lisovskiy, L. P.	33
Kubarev, A. V.	48, 69	Litovchenko, N. M.	28
Kukibnyy, Yu. A.	21	Litovchenko, V. G.	43
Kulevskiy, L. A.	38	Litvinov, V. F.	29
Kuniskiy, A. S.	48	Livshits, G. Sh.	51
Kuramatov, D.	77	Liyd'ya, G. G.	72
Kuranov, A. L.	10	Lobko, V. V.	80
Kurashov, V. N.	26, 34, 67	Logvinenko, V. P.	37
Kurbatov, V. M.	72	Lokshin, G. R.	23
Kurbatov, Yu. A.	74	Loshchilov, V. S.	70
Kurenev, Yu. P.	66	Lotkova, E. N.	13, 91
Kurkin, V. P.	54	Lukin, A. V.	61
Kurochkin, A. P.	60	Lukin, I. S.	12
Kuryatov, V. N.	18	Luk'yanov, D. P.	73
Kuznechik, O. P.	51	Lyakhov, G. A.	40
Kuznetsov, B. V.	24	Lyubimov, V. V.	23
Kuznetsov, Ye. P.	10, 46		
Kuznetsova, T. I.	46, 65		
		<u>M</u>	
<u>L</u>		Magdich, L. N.	30
Larionov, N. P.	61	Mak, A. A.	7
Larionov, V. S.	70	Makarov, G. N.	20, 44
Lariontsev, Ye. G.	17, 26	Makarov, V. I.	77
Larkin, A. I.	58	Makhorin, V. I.	11
Lashitskiy, E. K.	71	Makirov, K. A.	49
Lavrukovich, V. I.	31	Makogon, M. M.	1
Lavrushko, A. G.	41	Makovkin, A. V.	16
Lazareva, N. L.	75	Makshantsev, B. I.	79
Lebedev, V. I.	91	Maksimova, G. V.	43
Levedev, Yu. S.	58	Maksjan, K.	18
Lelyakov, A. V.	47	Makushkin, B. V.	67
Lemanov, V. V.	32	Malakhov, Yu. I.	68
Lenk, H.	61	Malashko, Ya. I.	9
Leonov, Ye. I.	29	Malinovskiy, V. K.	90
Leont'yev, K. L.	30	Mal'tsev, A. A.	16
Leshenyuk, N. S.	13	Malyshev, V. I.	7, 19, 65
Leskov, L. V.	25	Malysheva, O. V.	44
Letokhov, V. S.	15, 20, 22,	Malyutin, A. A.	66
	40, 44, 46,	Malyy, V. I.	36
	73	Mamedov, N. G.	48
		Mandrosov, V. I.	58, 61

Naray, Zs.	28	Ostapets, V. N.	22
Nasledov, D. N.	29	Ostrovskaya, G. V.	62
Naumenko, I. G.	8	Ostrovskaya, L. M.	28
Naumkin, N. I.	26	Ovchinnikov, V. M.	24
Nechitaylo, V. S.	39	Ovsyannikov, V. D.	66
Nefedova, V. V.	4		
Nekrasov, V. N.	76		
Nemchinov, I. V.	81, 86		
Nemes, G.	92		
Nesmeyanov, A. N.	28		
Nesterenko, T. M.	23		
Nesterenko, V. M.	69		
Neustruyev, V. B.	2		
Ngo Van Bi	29		
Nikitin, S. V.	26		
Nikitin, V. G.	5		
Nikitin, V. V.	17, 29, 30,		
	32		
Nikitina, T. F.	56		
Nikitinskaya, N. I.	52		
Nikolayev, V. M.	18		
Nikol'skaya, G. M.	48		
Nikulin, N. G.	44		
Nisel'son, L. A.	9		
Novak, V. Ye.	74		
Novik, A. Ye.	62		
Novikov, N. P.	52, 79		
Novikov, Yu. P.	54		
Novokhats'kyi, I. O.	78		
Nowicki, R.	69		
<u>O</u>		<u>P</u>	
Obraz, J.	62	Pak Dong Hyon	11
Obydenov, G. V.	74	Panin, B. D.	50
Ochkin, V. N.	14	Pankov, A. A.	38
Odintsov, V. I.	16, 36	Pankratov, A. V.	20, 21
Odulov, S. G.	62	Pankratov, S. G.	90
Ogurtsova, L. A.	8	Pankratov, V. M.	30
Okhrimenko, N. I.	66	Pankratova, T. V.	53
Okunev, R. I.	18	Pantaleyev, V. I.	56
Orayevskiy, A. N.	6, 21	Papakin, V. F.	16
Orekhov, B. A.	41	Papirova, I. I.	79
Orekhova, V. P.	2, 42	Parshkov, O. M.	36
Orlov, A. A.	71, 79	Parygin, V. N.	38
Orlov, L. N.	13	Pashchenko, V. Z.	31, 70
Orolova, I. B.	23	Pashkovskiy, M. V.	44
Orlovskiy, V. M.	74	Pasmanik, G. A.	45
Oseledchik, Yu. S.	47	Pasternak, L. B.	2
Osiko, V. V.	43	Paul, H.	43
Osipov, A. I.	89	Pavlik, B. D.	40, 73
Ostapchenko, Ye. P.	22	Pavlov, V. A.	14
		Pavlov, V. G.	13, 68
		Pavlova, V. A.	73
		Pavlovskiy, V. K.	54
		Pavlygin, G. N.	72
		Pavlyuk, A. A.	3
		Pchelintsev, A. M.	78
		Pchelkin, V. I.	9
		Pekar, L.	47
		Pel', E. G.	4
		Penkin, N. P.	10
		Perekalina, Z. B.	33
		Perel'man, M. Ye.	40
		Perminov, A. P.	20
		Perminov, V. P.	52
		Petelin, M. I.	45, 53
		Petnikova, V. M.	33
		Petrash, G. G.	14
		Petrosyan, A. G.	3
		Petrov, G. D.	87
		Petrov, S. Ya.	81
		Petrov, V. D.	62
		Petrov, Yu. N.	85
		Petrova, A. V.	30
		Petrovich, I. P.	39, 56
		Petrunkin, V. Yu.	18

Petrushenko, Yu. V.	44	Protasov, V. P.	18, 35
Pevtsov, A. B.	70	Protasov, Yu. S.	25
Pevzner, B. N.	74	Protsenko, Ye. D.	11
Pichugin, A. P.	56	Pruss, P. Kh.	56
Pik, L. I.	54	Puchkov, V. N.	75
Pik, Ye. I.	61	Pugnin, V. I.	12
Pikhotelev, A. I.	74	Puretskiy, A. A.	20, 44
Pikulik, L. G.	8	Puryayev, D. T.	75
Pilipovich, V. A.	69	Pustovalov, V. K.	86
Pirozhkov, V. A.	55	Puzikov, V. A.	76
Pirusskaya, L. A.	49	P'yanov, V. V.	77
Pisarev, R. V.	41	Pyatkin, V. I.	26
Piskarskas, A. S.	34, 43	Pyatnitskiy, L. N.	86
Platova, A. G.	20	Pyndyk, A. M.	74
Plinte, S. D.	51	Pyshkin, S. L.	6, 28, 29, 38
Plotnikov, A. F.	29, 56		
Plyatsko, G. V.	25		
Plyushchev, V. Ye.	2	R	
Podgayetskiy, V. M.	26		
Podgornyy, A. P.	8	Rabinovich, M. S.	81
Podobedov, V. B.	74	Rabinovich, Ts. M.	63
Pokrovskaya, F. S.	8	Radautsan, S. I.	4, 28, 29
Polevoy, B. I.	49	Rakhmatulina, A. Kh.	80
Polivanov, Yu. N.	38	Ramazanov, G. S.	24
Poltavtsev, Yu. G.	77	Ratner, A. M.	23, 67
Poluektov, I. A.	5	Raychenko, A. I.	81
Polyakov, B. I.	51	Raychinskite, B. K.	42
Polyanskiy, V. K.	62	Raykher, M. M.	22
Pomerantsev, N. M.	62	Razdobreyev, A. A.	86
Ponomarev, A. N.	20	Razgon, Ye. S.	2
Ponomarev, Yu. N.	1	Razmadze, N. A.	14
Popa, D.	64	Razumovskaya, A. I.	57
Popela, B.	52	Razuvayev, G. A.	92
Popkov, Yu. A.	42	Razvin, Yu. V.	69
Popov, A. I.	11	Remizovich, T. V.	77
Popov, V. N.	28	Remizovich, V. S.	90
Popov, Yu. M.	14, 56	Reutov, A. T.	35
Popova, N. B.	92	Revenko, V. I.	25
Posin, V. P.	76	Rez, I. S.	32, 33
Potapov, A. P.	56	Rezunenکو, V. G.	11, 55
Povrozin, A. I.	92	Rogachev, V. A.	17
Presnyakov, Yu. P.	72, 76	Rohmann, W.	42
Prishivalo, A. P.	52	Roldugin, V. I.	26
Privalov, V. Ye.	74	Romanyuk, V. A.	74
Prochukhan, V. D.	39	Rostovikova, G. S.	15
Prokhorov, A. M.	16, 82, 87	Rotar', S. V.	34
Prokhorov, V. G.	63	Rovinskiy, V. I.	68
Prokopenko, V. T.	79, 91	Rovinskiy, V. Z.	73
Prokudin, V. S.	25	Rozhanskiy, V. N.	81
Pronin, V. R.	48, 69	Rubanov, A. S.	1, 7, 39, 56
Protas, I. M.	77, 82		
Protasov, S. P.	70	Rubin, A. B.	70

Rubin, L. B.	31, 70	Semenov, A. S.	29
Rubinchik, B. Ya.	77	Semenov, G. B.	63
Rubinov, A. N.	9	Sementsov, G. I.	76
Rubinshteyn, B. I.	68, 69	Senatskiy, Yu. V.	92
Rubinshteyn, G. M.	40	Serbinov, A. I.	16
Rudakov, L. I.	87	Serebryakov, V. A.	7
Rudelev, S. A.	12	Seregin, A. G.	51, 55
Rudnitskiy, Yu. P.	9	Sevast'yanov, B. K.	2, 42
Rukman, G. I.	58, 69	Sevchenko, A. N.	32
Rumyantsev, V. D.	4	Shak, V. P.	93
Rusinowicz, T.	83	Shakhnazaryan, N. V.	37
Russu, E. V.	4	Shakin, O. V.	32
Rutkovskiy, F. K.	18	Shalaye, Ye. A.	33
Ryabtsev, N. G.	92	Shalyapin, A. L.	23
Ryazanov, M. I.	90	Shalyayev, M. F.	35
Rybakov, B. V.	11	Shamfarov, Ya. L.	45
Rykalin, N. N.	82	Shapiro, Ye. I.	48
Ryo Chol Gi	11	Shas', A. V.	31
Ryskin, A. Ya.	2	Shatberashvili, O. B.	80
Ryvkin, B. S.	39, 75	Shchayenko, V. V.	65
Ryvkin, S. M.	75	Shcheglov, V. A.	92, 93
		Shcheglov, V. I.	75
		Shchelev, M. Ya.	66
		Shcherbina, D. M.	55
		Shchuka, A. A.	2, 70
		Shelayev, A. N.	17
		Shelepin, L. A.	89
		Shelepo, A. P.	6
		Sheronov, A. A.	67
		Sherstobitov, V. Ye.	22
		Shevtsov, I. V.	51, 55
		Shidlovskiy, A. I.	78
		Shigorin, V. D.	75
		Shilov, A. F.	31
		Shipulo, G. P.	75
		Shirkov, A. V.	27
		Shirkov, Ye. I.	65
		Shklovskiy, Ye. I.	87
		Shlyakhtin, V. K.	69
		Shmayeva, V. M.	20
		Shmiglyuk, M. I.	47
		Shmoylov, Ye. F.	71
		Shmyglya, V. N.	30
		Shniger, V. E.	44
		Shotov, A. P.	4
		Shpak, M. T.	8, 9, 56
		Shteynshleyger, V. B.	54
		Shubadeyeva, L. P.	86
		Shul'gin, B. V.	42
		Shultin, A. A.	70
		Shumilov, E. N.	52
		Shur, Ya. S.	56
<u>S</u>			
Sadiyev, A.	5		
Sagitova, V. G.	20		
Salamatin, B. A.	92		
Salmin, A. V.	17, 18, 71,		
	75		
Samartsev, V. V.	55		
Samokhina, M. A.	89		
Samoylov, V. P.	15		
Samoylovich, A. I.	73		
Saprykin, E. G.	12		
Saprykin, P. I.	48		
Sarkisov, O. M.	19		
Sarkisov, S. E.	3		
Sarkisyan, E. L.	53		
Sarzhevskiy, A. M.	32		
Savchenko, V. F.	13, 91		
Savel'yev, B. A.	50		
Savost'yanenko, N. A.	63		
Savrushev, E.	70		
Sazonova, Z. S.	54		
Schmidt, H.	24		
Schulz, G.	63		
Schwider, J.	63		
Seleznev, V. N.	56		
Selezneva, I. K.	87		
Seliverstov, V. N.	30		
Seni, M. F.	6, 16		
Sernenets, I. A.	66		

Shvarts, Ye. Ye.	75	Solovarov, N. K.	3
Shvom, Ye. M.	24, 33	Solov'yev, V. S.	10, 11, 13, 15, 34, 55, 67, 68
Shykan, V.	49		
Sidorin, Yu. V.	79	Solov'yev, Ye. G.	57
Sidorov, A. N.	41	Sorokin, K. V.	30
Sikora, S. V.	11, 12, 15	Sorokin, S. A.	93
Silin, V. P.	86	Sorokin, V. N.	20
Sinit syn, A. P.	79	Soskin, M. S.	7, 57, 62
Sinit syn, G. V.	1	Sotin, V. Ye.	18
Sintsov, V. N.	63	Spitkovskiy, V. M.	72
Sinyuk, Yu. G.	64	Spornik, N. M.	57
Sinyushin, L. A.	77	Stabinis, A. Yu.	34, 43
Sizova, N. L.	81	Stadnik, B.	56
Skachkov, A. N.	20	Starikov, A. D.	7
Skibinskaya, S. V.	49	Starikov, B. P.	43
Skrotskaya, Ye. G.	31	Stel'makh, O. M.	85
Skrotskiy, G. V.	31, 60	Stepanov, A. F.	12
Skulachenko, S. S.	11	Stepanov, B. M.	58, 69
Skuratov, I. A.	27	Stepanov, D. P.	66
Slyusarev, S. G.	45	Stepanov, N. S.	50
Smekhov, G. D.	14	Stepanov, Yu. I.	27
Smetannikova, Yu. S.	29	Sterin, Kh. Ye.	74
Smirnov, A. I.	30	Sterligov, V. A.	64
Smirnov, A. Ya.	12	Sternzat, M. S.	51
Smirnov, L. S.	76	Steudel, H.	35, 36
Smirnov, N. D.	35	Stolpovskiy, A. A.	71
Smirnov, V. A.	44	Stolyarov, O. G.	44
Smirnov, V. B.	5	Stolyarova, N. N.	76
Smirnov, Yu. M.	15	Stor, E.	18
Smirnova, A. D.	39	Stoylov, Yu. Yu.	19
Smirnova, S. N.	76	Strashnikova, M. I.	5
Smolarek, K.	83	Strekalov, V. N.	81
Smulakovskiy, V. M.	15	Strekolovskaya, Ye. Yu.	35
Snitko, O. V.	64	Strigina, L. P.	49
Sobchakov, L. A.	63	Strizhevskiy, V. L.	40
Sobel'man, I. I.	18	Strona, L. N.	33
Sobol, A. A.	43	Stupin, D. Yu.	20
Sobolev, G. A.	58, 60, 61 64, 93	Suchkov, A. F.	6
		Sudzilovskiy, V. Yu.	6
Sobolev, N. N.	13, 14, 91	Sukach, G. A.	43
Sobolev, V. S.	71, 75	Sukhodrev, N. K.	78
Sochor, V.	19	Sukhorukov, A. P.	52, 53
Sokolov, A. V.	49	Sultanov, M. A.	80
Sokolov, D. V.	7	Sushkin, V. N.	23
Sokolov, V. K.	59, 64	Svetogorov, D. Ye.	55
Sokolova, Ye. Yu.	36	Swierczynski, R.	83, 85
Sokolovskiy, R. I.	44	Syachinov, V. I.	51
Sokovikov, V. V.	14	Syczewski, M.	9
Solc, I.	27	S'yedugin, V. V.	34
Soldatov, A. N.	43	Sysun, V. V.	26
Solokha, A. F.	11	Szabo, L.	45
Solomakha, D. A.	75	Szedny, A.	52

<u>T</u>		
Tachkov, A. N.	60	
Tagirov, R. I.	56	
Talalayev, M. A.	38	
Tal'roze, V. L.	20	
Tarassenko, V. F.	74	
Tarasov, P. A.	83	
Tarasov, R. P.	27	
Tarasov, Yu. A.	3	
Tatarenkov, V. M.	68	
Tatarskiy, V. I.	51	
Telegin, B. V.	15	
Teleshevskiy, V. I.	31	
Tem, E. L.	51	
Tendler, M.	45	
Terent'yev, Yu. N.	76	
Terskoy, Ya.	75	
Teselkin, V. V.	22	
Tezikov, V. N.	20	
Tezlevan, V. Ye.	28	
Tikhonchuk, V. T.	86	
Tikhonov, Ye. A.	8, 9	
Timofeyev, V. B.	25	
Timofeyev, Yu. P.	65	
Timoshechkin, M. I.	43	
Timoshenkov, V. A.	40	
Tishchenko, V. G.	8	
Titov, G. E.	69	
Tkachuk, A. M.	2	
Tolkachev, V. A.	8	
Tolstoy, M. N.	7	
Tomashko, I. V.	73	
Tomov, I. V.	33	
Topkov, A. I.	49	
Topkov, A. N.	15	
Toporets, A. S.	55	
Toropov, A. K.	75	
Tret'yakov, D. N.	4	
Tret'yakova, K. V.	9	
Troitskiy, Yu. V.	69	
Trokhon, A. M.	76	
Tronner, Z.	56	
Trop, I. S.	28	
Troshin, Ya. K.	16	
Trukan, M. K.	41	
Tsaryuk, V. I.	40	
Tsenter, M. Ya.	35	
Tseytlin, N. M.	64	
Tsingarelli, M. N.	78	
Tsoy, T. G.	77	
Tsybin, A. S.	82	
Tsypin, M. I.	28	
Tulyakova, M. A.	67	
Tumanov, O. A.	20	
Tunkin, V. G.	65, 66	
Turchin, V. I.	64	
Turkin, A. A.	17	
Turukhano, B. G.	64	
Turukhano, N. V.	64	
Turyanitsa, I. D.	32	
Tyagay, V. A.	64	
Tychinskiy, V. P.	77	
Tyunina, Ye. S.	78	
Tyurin, Ye. L.	92	
Tyushkevich, B. N.	69	
<u>U</u>		
Udalova, L. V.	43	
Uder, Yu.	64	
Uglov, A. A.	79, 82	
Ulyakov, P. I.	79	
Umanskiy, S. Ya.	12	
Umarov, B. S.	43	
Undalov, Yu. K.	39	
Upadyshev, V. A.	79	
Upatova, T. V.	39	
Urbanovich, A. I.	39	
Urmakher, S. L.	48	
Urusovskaya, A. A.	81	
Ushagina, V. I.	93	
Usmanov, R. G.	55	
Uspenskiy, A. V.	68	
Utkin, Ye. N.	71	
<u>V</u>		
Vacek, K.	49	
Vacherikov, V. V.	69	
Valov, P. M.	39, 75	
Vanin, N. V.	53	
Vanyukhin, G. N.	43	
Vanyukov, M. P.	7, 26	
Varaksin, V. P.	71	
Varshalovich, D.	32	
Vasilenko, Yu. G.	75	
Vasil'yev, A. A.	32	
Vasil'yev, V. I.	76	
Vasil'yev, V. N.	94	
Vasil'yeva, N. V.	60, 64	
Vavilov, V. S.	29, 43	
Vavrinec, E.	49	
Vedeneyev, V. I.	19	

Veklenko, B. A.	55
Velculescu, V. G.	83
Velichanskiy, V. L.	16
Velichko, V. A.	74
Velisek, J.	27
Venkin, G. V.	18, 35
Vereshchaka, A. I.	30
Veselova, L. K.	52
Vesene, T. B.	42
Veyko, V. P.	80
Vinogradov, V. S.	43
Vinokurov, G. N.	23
Vlad, V. I.	64
Vladimirov, V. I.	38
Vlasenko, N. A.	34
Vlasov, D. V.	36
Vlasov, N. G.	57, 65, 76
Vlasov, Yu. N.	76
Vodopyanov, L. K.	43
Volchkov, V. S.	25
Volkov, A. I.	9
Volkov, S. Yu.	2
Volkov, V. N.	20
Volkova, A. D.	48
Vol'nov, M. I.	17
Volod'kina, V. L.	79
Volosov, V. D.	6, 34
Volyak, T. B.	87
Volynets, F. K.	43
Vorob'yev, M. Yu.	26
Voronko, Yu. K.	43
Voronkov, G. L.	27
Voronov, G. S.	88
Vorontsov, V. I.	46
Voropay, Ye. S.	32
Voytovich, A. P.	12
Vul'fson, Ye. K.	78
Vysokosov, Ye. P.	69
Vysotskiy, M. G.	18

W

Welsch, E.	42
Wesolowska, C.	28
Wozniak, J.	18
Wyrebski, W.	52

Y

Yakovenko, A. A.	5
Yakovenko, V. A.	76
Yambayev, Kh. K.	74
Yampol'skiy, P. A.	52
Yampol'skiy, Yu. P.	94
Yanayt, Yu. A.	9
Yarin, L. P.	76
Yaroshetskiy, I. D.	39, 75
Yasen', A. I.	91
Yasterzon, L. I.	68
Yefimenko, L. V.	47
Yegorov, V. K.	16
Yemel'yanov, V. I.	26
Yenin, V. N.	17, 18, 34,

Yermachenko, V. M.	71
Yermakov, A. L.	69
Yermakov, V. A.	76
Yeroshenko, V. M.	28
Yershov, L. S.	76
Yershov, O. A.	20
Yershov, Ye. I.	76
Yershova, T. I.	27
Yesayan, S. Kh.	76
Yevseyev, I. V.	32
Yevtikhiyev, N. N.	56
Yevtushenko, G. S.	65
Yuchenkova, T. V.	43
Yudin, I. I.	91
Yudin, R. N.	11
Yukov, Ye. A.	12
Yundenko, I. N.	46

Z

Zabolotnaya, T. G.	66
Zagatin, V. I.	5
Zagorodnikov, A. A.	54
Zahn, H.	70
Zakharchenya, B. P.	87
Zakharov, A. S.	41
Zakharov, S. M.	78
Zakharov, V. P.	40
Zalesskiy, V. Yu.	56, 77, 82

Zaliva, V. I.	80
Zamyatin, A. Yu.	20
Zaporozhchenko, R. G.	24
Zasavitskiy, I. I.	4
Zaslonko, I. S.	16, 19, 21
Zastrogina, Yu. F.	32, 76
Zazulevskaya, L. Ya.	49
Zel'dovich, Ya. B.	55
Zhabotinskiy, M. Ye.	9, 91
Zhdanov, V. K.	48
Zhelokhovtseva, O. M.	71
Zheltoy, G. I.	7
Zhiryakov, B. M.	82
Zhukova, L. A.	80
Zhuravlev, V. A.	87
Zhuravlev, V. F.	71
Zimin, D. B.	71
Zimokosov, G. A.	67
Zisu, A.	6
Zolin, V. F.	40, 91
Zubarev, I. G.	80
Zubarev, T. N.	3
Zubkova, V. S.	7
Zubov, V. A.	65
Zudkov, P. I.	24
Zusman, L. D.	40
Zusman, M. I.	38
Zuyev, M. G.	23
Zuyev, V. A.	43
Zuyev, V. S.	21
Zuyev, V. Ye.	52, 94
Zuzenko, V. L.	52
Zverev, M. M.	3